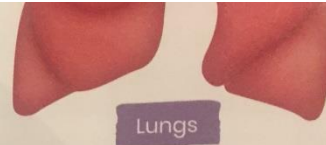


Experiments:

When we exercise, our muscles need more oxygen. To get more oxygen around our body, we breathe faster and our heart speeds up to pump blood more rapidly.



Investigate: How Does Our Breathing Change When We Exercise?

You will need:

- a watch or stopwatch
- pencil and paper

Steps:

1. Count and write down how many times you breathe in and out in one minute.
2. Do 20 star jumps.
3. Count and write down how many times you breathe in and out in one minute immediately after finishing the star jumps.

Results:

Compare the number of breaths before and after the star jumps.

Conclusion:

How did your breathing change?

after them. Some foods and drinks damage our teeth more than others.

Investigate: Which Drinks Damage Our Teeth?

Eggshells are made of similar materials to teeth. Use them to investigate the effect of different drinks on teeth.

You will need:

- hard-boiled eggs
- small bowls
- fruit tea, fruit squash, diet fizzy drink, sugary fizzy drink, orange juice, milk, water

Steps:

1. Pour an equal amount of each drink into its own bowl.
2. Add a hard-boiled egg to each bowl.
3. Leave the eggs in the bowls for one to two weeks.

Results:

Every few days, observe the eggs and record what you see.

Conclusion:

Which drinks caused most damage to the eggs? Does it matter if they contain sugar? Does it matter if they contain acids (e.g. citric acid)?

What is Your Lung Volume?

Do you think you're fit and healthy? Let's test your lung volume to find out. Just how much air can your lungs can hold? With the help of a few simple household objects, some scientific know how and a dash of curiosity you can make this experiment look easy.

What you'll need:

- Clean plastic tubing/straw
- A large plastic bottle
- Water
- Kitchen sink or large water basin

Instructions:

1. Make sure the plastic tubing is clean
2. Put about 10cm of water into your kitchen sink.
3. Fill the plastic bottle right to the top with water.
4. Put your hand over the top of the bottle to stop water escaping when you turn it upside down.
5. Turn the bottle upside down. Place the top of the bottle under the water in the sink before removing your hand.
6. Push one end of the plastic tube into the bottle.
7. Take a big breath in.
8. Breathe out as much air as you can through the tube.
9. Measure the volume of air your lungs had in them.
10. Make sure you clean up the area to finish.

What's happening?

As you breathe out through the tube, the air from your lungs takes the place of the water in the bottle. If you made sure you took a big breath in and breathed out fully then the resulting volume of water you pushed out is equivalent to how much air your lungs can hold. Having a big air capacity in your lungs means you can distribute oxygen around your body at a faster rate. The air capacity of lungs (or VO₂ max) increases naturally as children grow up but can also be increased with regular exercise.

